

10/16/13

### Agenda

- Opener
- Review Homework - Worksheet 2.4-2.5
  - Front side
    - ( Problems 1 - 4, pick any 2 of them)
    - ( Problems 5 - 13, pick any 4 of them)
  - Back side (riddle)
    - ( Problems 1 - 10, pick any 5 of them)
- Sections 2.6 - Ratios, Rates, & Conversions
- Homework   HW 2.6
  - p. 119-121 (10-32 evens, 46)

# Section 2.6 - Ratios, Rates, & Conversions

Target 2D

Ratio:	A ratio compares two numbers by division.	
$\begin{array}{r} B \ 11 \\ G \ 11 \\ T \ 22 \end{array}$	Ex. $\frac{11}{22}$ 11 To 22    11:22 $\frac{1}{2}$ 1 To 2    1:2	$\frac{\text{GIRLS}}{\text{STUDENTS}}$
Rate:	A ratio that compares quantities measured in two different units.	
$\begin{array}{c} \$ \\ \text{TIME} \\ \text{CONSUMABLES} \end{array}$	Ex. Miles per hour Miles per gallon liters per minute	$\frac{\text{BOYS}}{\text{GIRLS}} = \frac{11}{11} = 1$ $24.7 \text{ mpg}$
Unit Rate:	A rate with a denominator of 1.	
	Find the unit rate for: (\$/oz)	
$\begin{array}{c} \$ .95 \\ 95\text{¢} \end{array}$	A 24 ounce box of cereal for \$3.00 $\frac{\$3.00}{24\text{oz}} = \frac{\$.125}{1\text{oz}} = 12.5\text{¢ per oz.}$	
	A 30 ounce box of cereal for \$4.50 $\frac{\$4.50}{30\text{oz.}} = \frac{\$.15}{1\text{oz.}} = 15\text{¢ per oz.}$	
Grocery Store:	Which is a better buy, a 24 ounce box of cereal for \$3.00 or a 30 ounce box of cereal for \$4.50?	
	CHEAPEST UNIT RATE	

Which store has the best deal? (find unit rates)

Store A - \$25 for 2 shirts *12.50 per SHIRT*

Store B - \$45 for 4 shirts *11.25 per SHIRT*

Store C - \$30 for 3 shirts *10.00 PER SHIRT*

Converting  
Units:

p. 814 in book

	United States Customary	Metric
Length	12 inches (in.) = 1 foot (ft) 36 in. = 1 yard (yd) 3 ft = 1 yard 5280 ft = 1 mile (mi) 1760 yd = 1 mile	10 millimeters (mm) = 1 centimeter (cm) 100 cm = 1 meter (m) 1000 mm = 1 meter 1000 m = 1 kilometer (km)

Customary Units and Metric Units
1 in. = 2.54 cm 1 mi ≈ 1.61 km 1 ft ≈ 0.305 m

Time		
60 seconds (s) = 1 minute (min)	4 weeks (approx.) = 1 month (mo)	12 months = 1 year
60 minutes = 1 hour (h)	365 days = 1 year (yr)	10 years = 1 decade
24 hours = 1 day (d)	52 weeks (approx.) = 1 year	100 years = 1 century
7 days = 1 week (wk)		

Finding  
conversions:

Convert 330 minutes to hours.

$$\underline{330 \text{ min}} \times \frac{1 \text{ hr}}{60 \text{ min}} = \frac{330 \text{ hr}}{60} = 5.5 \text{ hr.}$$

Convert 15kg to grams.

$$1 \text{ kg} = 1000 \text{ g}$$

$$15 \text{ kg} \times \frac{1000 \text{ g}}{1 \text{ kg}} = 15000 \text{ g}$$

Convert 5 ft. 3 in. to inches.

Convert 4 yds. to meters.

You try:

1250 cm to meters.

168 hours to days.

5 hours to seconds.

$$5 \text{ hr} \times \frac{60 \text{ min}}{1 \text{ hr}} \times \frac{60 \text{ sec}}{1 \text{ min}} = 18,000 \text{ sec.}$$

Summary:

Remember, rates are always simplified. If you are trying to convert from one unit to another, the unit you want to end up with should always be on top. Use common sense.